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TITLE: FLATTENING OF PHOSPHOSILICATE GLASS FILM

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ABSTRACT:

PURPOSE: To shorten a channel and to flatten a phosphosilicate glass film by
a method wherein PSG is heat-treated in a steam atmosphere.

CONSTITUTION: A P-type region 1 and a fixed oxide film for element isolation
are formed, a polycrystalline silicon film 4 to be used as a gate electrode is formed, and the respective impurity diffusion layer 8, 9 of an N-type and a P-type are formed by the ion implantation method using a photo resist as a

mask. Then a thermal oxide film 5 is grown for 30min at 900°C in an oxygen
atmosphere, and a silicon nitride layer 6 is adhered at 40nm thickness. **PSG** 7 of 8mol% of phosphorus concentration is adhered on the upper part thereof, and
flowing of **PSG** is performed for 90min at 900°C in a **steam atmosphere** having
1.8 of the rate of hydrogen to oxygen, for example, in **atmospheric pressure**. Etching for contact holes is performed using the photo resist thereof as a mask, and Al wirings are formed finally to complete a complementary MOS semiconductor device.

PATENT ABSTRACTS OF JAPAN

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(54) FLATTENING OF PHOSPHOSILICATE GLASS FILM

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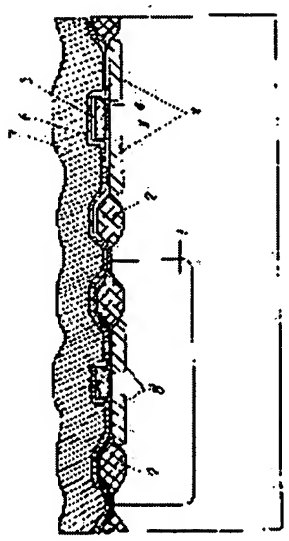

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